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WILL THERE BE A PLANE IN EVERY GARAGE ?

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Prepared for
THE UNITED STATES ARMED FORCES
by
THE AMERICAN HISTORICAL ASSOCIATION

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Specific suggestions for the discussion or forum leader who plans to use this pamphlet will be found on page 41.

WAR DEPARTMENT

WASHINGTON 25, D. C., 8 AUG 1945.

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**WILL
THERE BE A
PLANE IN
EVERY GARAGE ?**

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WHO IS GOING TO FLY THE PLANES OF TOMORROW?

UNTIL ORVILLE WRIGHT took off from the earth in 1903 and twelve seconds later landed 120 feet from where he started, the world's most successful aerial navigator was a joker by the name of Prince Houssain. The prince could go wherever he wanted through the air—and that was more than the Wright brothers or other early birdmen could do.

Of course Houssain, like the Wrights, had a very special contraption to carry him through space. It was a magic carpet, and in 1,001 Arabian nights there was only one of its kind. In the light of day there might not have been even that many.

No longer, however, is flying through the air the exclusive privilege of either an imaginary Arabian prince or a couple of intrepid American inventors. At Kittyhawk the Wright brothers unlocked the sky to all kinds of heavier-than-air

This pamphlet was in press when Japan surrendered. Lines appropriate during the war have not been reconverted to peace.

flying: military airplanes, commercial craft, and personal planes that anyone can fly.

Ten years after the war, if Prince Houssain were still around to take a Sunday joy ride, he would probably have to look sharp to avoid a collision with one of the many planes we are told will crowd the skyways.

A great deal of thought is being given to these airplanes of the future — especially to the private planes. Airplane manufacturers, airplane designers, and other interested persons are putting their minds together on the question of what kind of planes to put on the market once civilian production starts again.

In all this discussion there is one missing person — the person for whom all the planning is being done. YOU are that person. If you could be on hand the others would fire questions like these at you:

Are you going to fly yourself after the war? For business? For pleasure? In a plane of your own or in one you will rent? How much money are you going to put into a plane? How many seats do you want in it? Do you want high performance or maximum safety? Are you serious enough about this to have read up on the subject? Have you figured out how an airplane will fit into your personal life? Have you had any experience in owning or operating a small plane? Have you ever belonged or would you belong to a flying club? Are other members of your family interested in flying?

Are you going to own a plane?

The automobile is one of the most useful machines ever invented by man and it can perform a number of daily services that make life easier. Is the private plane in its present stage of development a very useful article for most people

to own? A plane can take you from St. Louis to Buffalo, but it cannot be used for taking the kids to school, your wife to the grocery store, or you to your job. In other words, the private plane has the automobile to reckon with. Until private planes can do everything that automobiles can do, and fly as well, they will not displace the automobile. Not even the most enthusiastic advocate expects they will.

But the war has given America a close-up view of the modern airplane. In addition to the considerable number of private plane owners, there are 75,000 with civilian pilot licenses who do not own planes, and 3,000,000 young men engaged in some way in military and naval aviation — nearly 300,000 of them with pilot training. Not only all these, but many others, including some of the older generation, will want to learn to fly and have the thrill of owning and operating their own planes.

How much will it cost?

We can quote figures on the prewar cost of buying and operating a private plane. One estimate indicates that it cost about \$1,000 to operate a \$2,000 airplane for 100 hours a year. Assuming the life of the plane to be about seven years, it would cost you a minimum of \$9,000 if you keep the plane that long. For that amount of money you could consecutively buy and operate three or four good automobiles over the same period of time.

We have only guesses to go by for the price of and demand for airplanes of the future. The predictions range anywhere from 20,000 to 450,000 private planes within five or ten years after the war. At a guess, most airplanes for personal use will sell for about \$2,000. By comparison, there was a prewar market for some 50,000 Cadillac automobiles a year — costing \$2,000 apiece. If the price comes down to \$1,000,

the market will of course expand — nobody knows just how much.

Whether you are going to have a private plane after the war depends probably on whether airplane designers and engineers are able to build a safe, reliable plane that you can operate; whether you will have money enough to buy and operate it; whether your community has landing facilities for private planes; and, most important of all, whether you can make practical use of an airplane.

WHAT WILL THE POSTWAR PLANES BE LIKE?

THE PERSONAL PLANE of the postwar era will not be a super-duper Buck Rogerish aerial jalopy, capable of flying in any direction. What you can expect is a sound, simple, and safe airplane, built along the lines of the "grasshoppers" and "flying jeeps" now being used by the British and American armies for liaison work and artillery spotting. It will be like the Taylorcraft, Aeronca, Stinson, Fairchild, and Piper Cub planes which were popular before the war, but will carry the latest improvements that have been learned from wartime experience.

These aircraft will combine as high performance as is consistent with reasonable safety, comfort, and cost. They will be practically foolproof, but not darn-fool proof.

The typical postwar plane for private use will not be much harder to fly than an automobile is to drive — although the differences probably will always be considerable. Most private planes will probably be about 20 feet long and stand 6 to 10 feet high. They will have single air-cooled engines averaging about 65 to 75 horsepower for two-place and 125 to 250 horsepower for four- or five-place planes. They will

be capable of climbing about 1,000 feet in 60 seconds, yet may be landed at safe, slow speeds. Most of the postwar family planes will have four seats, since the public seems to favor that number of accommodations.

All plastic or none?

Many of these planes will have features that are new to the light-plane field. For instance, they may have retractable landing gear that increases the speed of the plane as much as 20 to 30 miles an hour, permitting the use of lower horsepower engines; sound-insulation in the cabin to reduce the noise from the motor and permit conversation without shouting; controlled cabin heating; plastic domes and larger side windows, giving the pilot and passengers an unrestricted view; streamlined fuselages to conform with easy airflow; and perhaps tricycle landing gear.

Postwar private airplanes will be made of plastic-bonded veneer, plywood, aluminum, or fabric. Molded plastics and other types of plastics developed in the war may possibly find their way into a number of private plane models. The widespread use of plastics in these light planes will depend, however, upon the size of the market, since plastic dies and molds are expensive. Unless the production is high, it will be cheaper to use some other material. Some think that plastics will reduce the cost of airplanes; others doubt this.

The familiar solid wood propeller is cheap and lightweight. It will be standard equipment on most of the private airplanes. However, variable pitch, automatically controlled, metal propellers will be available to those who can afford them.

The familiar types

Private planes will probably be of three general types, each

designed for a particular group of private flyers and built to meet their requirements.

First, there will be airplanes of conventional design but with greatly improved reliability and performance. These private aircraft will carry from two to eight passengers, and travel at speeds of from 90 to 200 miles an hour, with a cruising range of 400 to 600 miles. Some of them will have twin engines, but the majority will be single-engine planes. In price, they may range from \$1,500 to \$20,000. These planes will be ideal for the live-wire aviation enthusiasts who use their planes for sport, recreation, or business.

Next, there will be medium-priced, medium-performance "armchair" planes. They will be slower and less maneuverable, but simpler and safer to fly. This type of plane was developed before the war, and is designed for the average amateur aviator, who is less interested in the finer points of flying than in getting about for a Sunday spin or a short cross-country trip. These planes do not stall or spin. They get their spinproof characteristics through "two control" operation, instead of three. This means that the ailerons and rudder controls are synchronized and rudder pedals eliminated. Equipped with tricycle landing gear, they are easy to get off the ground and to land. Aircraft of this type will carry two or more passengers at speeds of from 90 to 140 miles an hour. They will probably cost from \$1,500 to \$10,000 — with the great majority of the planes at the lower price levels.

Pusher planes

A modern version of the airplane which Orville and Wilbur Wright flew at Kittyhawk may be offered on the postwar private plane market. This is the pusher plane, on which the propeller faces to the rear, behind the pilot and passenger



cabin. There are no engines or propellers out front to hinder the view when flying, and the danger of someone getting tangled up in the whirling propeller blades when the plane is on the ground is greatly reduced. In other respects — performance, construction, and cost — the pusher plane is quite similar to the conventional planes just mentioned.

Water birds

If you are nautically minded, you'll probably have your eye on a flying boat or an amphibian plane. Amphibians have the advantage of being at home on land or water. This gives the owner a wider choice than a land plane does of home base and places to visit.

Although they are more costly than land planes of corresponding power or capacity, all-metal amphibians may prove popular with men who use their planes for business trips. The higher cost may be justified by the plane's utility value.

Most amphibians will have two motors, cruise at around 140 miles an hour, and fly as high as 15,500 feet. The cabin of one of these planes will be the miniature of a big airliner cabin, accommodating a pilot and several passengers. There will be ample space for baggage, salesman's sample cases, or



what you will. In fact, it would be possible for one man to set up housekeeping in the cabin.

Landplanes, like those mentioned above, can readily be converted into seaplanes by taking off the landing gear and substituting pontoons or floats. Although floats are not cheap, a converted landplane is less expensive than an amphibian.

The unfamiliar types

Finally there will be the more revolutionary types of aircraft. These include helicopters, jet-propelled planes, rocket ships, and cars that fly or roadable airplanes with folding or detachable wings which are at home either in the air or on the ground. Engineering problems still remain to be solved before these new types can be offered to private airplane buyers. It is probable that at least five or ten years will pass before any of this group finds widespread use.

For many years aeronautical engineers and designers have been toying with ideas for an automobile that can fly or a plane that can be driven along highways. Eventually this very desirable hybrid may be born. To date, however, the results have been contraptions that were neither very good automobiles nor very good planes. In roadability, comfort,

and safety they did not meet automotive standards. The extra weight of four wheels, power transmission, and other parts needed for ground travel seriously handicapped their performance in the air.

One of the most practical ideas advanced in this field has been an automobile, which looks more like a plane fuselage on wheels than a present-day car, fitted with detachable wings which can be stored at the airport, leaving the car free to be driven home.

Sunday supplement airplanes

If private airplanes could take advantage of all the technological advancements coming out of the war, the result would probably be a craft driven by a stream of gas at speeds as high as 550 miles an hour. It might recall fantastic Sunday supplement pictures of future planes.

It would be a jet-propelled plane, looking something like a cross between the P-38 Lightning and the P-40 Warhawk. It would be equipped with electronic anticollision devices and television screens that would make possible a perfect three-point landing in dense fog. It would have a push-button radio for instrument flying. The plane would accommodate four persons in comfortable chairs, whose positions could be adjusted to suit the passengers' whims.

Such a plane, with possibly an engine instead of a jet-propelled unit, seems to be what the American public dreams of in peacetime private planes. Its cost, however, would place it well beyond the reach of all except the most wealthy enthusiasts.

What's the truth about helicopters?

Right about here someone usually asks, "What about helicopters?"

The helicopter has a future, there's no doubt about that. Its basic principle has been demonstrated to be feasible. Recognized authorities agree, however, that certain engineering problems remain to be solved before a practical helicopter can be put on the market for family purchase. This will require perhaps ten years of research and development, perhaps less. At any rate, don't expect to go down and pick out your helicopter on V-Day — engineers have a lot more work to do on it before it's ready for merchandising.

The helicopter can be either a useful everyday convenience or a luxury — depending on where you live. If your home is in a suburban or rural district, the helicopter can take you to and from work daily in comfort and with speed. You won't get tied up in a traffic jam or have to stop for red lights or wait for a ferryboat. You will not need an elaborate landing field. Any level plot of ground 50 feet in diameter will suffice. This plot need not be adjacent to your helicopter garage. It can be several blocks away, for it is thought that helicopters will be built so that they can be driven along streets for short distances. Naturally, if you live in a city or congested area you will not find everyday use for the helicopter. You might use it for pleasure trips over the week end or holidays. In this case your helicopter will be a luxury.

Will helicopters replace small planes?

From the standpoint of operating economy, the helicopter has every advantage over conventional airplanes of like size. The owner must be willing, however, to forego speed for low operation cost. While the helicopter can be used for cross-country travel, it moves through the air at comparatively slow speeds—the top being about 150 miles an hour. The conventional private plane will get you over long hops faster.

Today, the best engineering brains and powerful financial

interests are pushing the development of the helicopter. It is impossible to predict what the outcome may be.

Luxurious cabin furnishings, upholstered seats, roll-down windows, and most of the conveniences found in the better automobiles will probably be incorporated in the helicopter. Four-passenger helicopters, completely furnished, and equipped with 300- to 400-horsepower engines, will sell for around \$10,000. The nominal price tag on the two-passenger utility helicopter has been estimated to be about \$5,000. If there is a big demand for the "flying windmill" the price may go even lower.

In addition to small, private-model helicopters, larger ones capable of carrying 40 persons, powered by 2,500-horsepower engines, and with rotors (the windmill-like propellers overhead) that cut 70-foot arcs, are in the realm of possibility.

The biggest technical problems that hold back the development of the helicopter are: vibrations of the rotors and of the smaller propeller on the tail; the automatic stability of the craft; and the speed and load in relation to the horsepower required. It is also said to have poor performance at high altitudes.

Is it easy to fly a helicopter?

The experts disagree on whether helicopters are or will be easy for ordinary persons to learn to fly. On the one hand are the manufacturers, one of whom has announced postwar production of a helicopter sedan that he says will be easier to operate than many automobiles. Another, while he doesn't think helicopters will be any easier to fly than standard planes, believes that any good motorist can learn how to do it.

This second manufacturer points out that the beginner need lift the machine only a few inches off the ground at first in order to move around slowly and cautiously. In this

way he can gain skill and confidence gradually and without risk.

On the other side of the argument are such men as Grover Loening, chairman of the helicopter committee of the National Advisory Committee for Aeronautics. According to Mr. Loening, the helicopter is an even more professional apparatus than the airplane. He believes that for the next few years it will be limited to use by professional pilots and aviation companies. "It is not at all a vehicle to be placed in the hands of the public," Mr. Loening contends, and he states that helicopters are hard to learn to fly.

Helicopters, he predicts, will be bought by companies who will hire pilots to fly them for exploration work and to carry personnel and goods to inaccessible places. The United States Coast Guard is almost certain to have over 90 percent of its future air fleet in the form of helicopters.

Will the helicopter replace the automobile?

The helicopter will do many things that it is impossible for a car to do, and it will do many things that the car can do, only much better. It can land almost anywhere, even on swampy marsh land or on water (with rubber bag floats). Where it can't land, as in thick forests or on rough, rocky terrain, it can hover in mid-air a few feet over the spot and lower a rope ladder by means of which you can reach the ground.

On the other hand, it would not be practical for you to jump into a helicopter and flit down to a newsstand a few blocks away to pick up a Sunday paper. You'd be better off using an automobile on such a trip through city streets. The auto and the helicopter supplement each other very well. You can use your car in crowded congested urban areas and your helicopter for all other travel.

Disregarding cost, which would you rather have, a conventional airplane, a helicopter, or a flying boat? Why? Should the helicopter be limited to usage by professional pilots? Do you think that the helicopter will replace the automobile? Private plane? If you knew that you would have to wait five years before you could buy a helicopter, would you invest in a conventional airplane in the meantime or wait until the helicopter is ready?

IS BUYING A PLANE JUST LIKE BUYING A CAR?

BUYING A PRIVATE PLANE is a lot like buying a car, except that for your own sake you ought to be more critical of a plane than of a car. There are some aircraft salespeople who may try to pass off a defective plane at a bargain price, realizing that you are an amateur and probably won't discover the fault until later. If the fault results in the failure of some part of the ship while you are flying, it may be too late for you! The majority of airplane distributors, however, are reputable, and they like to deal with intelligent people who ask questions and demand demonstrations before they buy.

If flying is comparatively new for you, it's a good idea to invite someone who knows about planes to go along with you when you shop for a plane. He might be your flying instructor, an accredited airplane mechanic, or an experienced airman. Be guided by his suggestions.

You'll be better off if you buy a new plane built by a well-known firm. If something goes wrong, they'll be more likely to make good and it will be easier for you to get standard replacement parts. Beware of homemade or rebuilt planes.



Why do you want a plane?

Before you start shopping for an airplane, decide what you want in the way of shape, size, weight, performance, and seating capacity. The best way to begin is to ask yourself, "What am I going to use this plane for?"

If you are going to be a "Sunday flyer," and do most of your flying on week ends near home, you will probably invest in a low-cost, low-horsepower plane that will have a cruising speed of about 100 miles an hour and a range of about 200 miles.

If you plan to use your plane for cross-country trips, for business, vacation, or week ends at grandfather's place in the country, you'll want more speed, greater range, and larger carrying capacity. The flying machine you might buy will be moderately large in size and have a cruising speed of about 130 miles an hour and a minimum range of 500 miles between refuelings. Too frequent stops for fuel seriously cut down the average speed of an airplane on cross-country trips. If you plan to fly for business, you'll probably have to spend \$5,000 or more for your plane and be ready to pay high maintenance costs, operating expenses, and insurance rates.

If you're going to do a lot of cross-country flying, you'll probably want radio equipment, which is not included in any standard medium-priced personal aircraft. On normal operations, you will then be able to receive take-off and landing information from airport control towers and other information from the airways radio to help you in your flight. In flying through a storm, your radio will bring you weather reports. In emergencies, radio-signal direction finders operated by the Federal Communications Commission can establish your location if you get lost.

You must have radio equipment to land at air terminals where commercial airliners make scheduled stops, unless you are forced to land in an emergency. Radio communication with the control tower in such airports is necessary to the smooth handling of air traffic. Through radio, planes are notified where and when they are to land, when they should take off, and what runway to use.

Think before you buy

Safety, comfort, practicability, performance, and good looks are going to be the chief points that airplane salesmen will use to induce you to buy.

When you think of seating capacity, don't forget to consider the number of persons in your family. If there are three in your household and you buy a two-seater, someone will always have to be left on the ground.

Twin booms, like those in the Lockheed P-38 fighter plane, will be offered on some planes instead of the more conventional long fuselage. In this type the twin booms carry the tail control and stabilizing surfaces. When the wing is fastened to the bottom of the fuselage to give a low-wing design, a very safe plane results. Pusher planes of this design, where the engine is centered in the rear of the cabin so that

the twin booms build a fence around the propeller, have an added safety feature. The booms protect bystanders from serious injury in the blades of a whirling propeller when the airplane is on the ground.

It is important that the pilot's visibility be good. From a comfortable, relaxed position in the pilot's seat, you should be able to see above, below, far back on at least one side, and of course directly ahead. The better the visibility, the easier it will be for you to control your plane and the less will be the chances of collision. Ample visibility for the passengers is important, too. If they can look out of the plane conveniently, they'll enjoy the trip more.

Additional safety features may be: two instead of three controls; dual controls, so that either person in the front pair of seats can pilot the plane; and flaps, known as high-lift devices. The latter act as a sort of supplementary wing, permitting the pilot to take off and land at a lower ground speed — thus with greater safety.

Your plane will come equipped with all the flight and navigational instruments necessary for its safe operation. These include compass, altimeter, turn and bank indicator, airspeed indicator, fuel gauge, and clock. If you plan on buying additional instruments, invest in a rate-of-climb indicator, artificial horizon, and directional gyro. They'll be most helpful to you.

The power plant

The engine in your plane should be of the approved type, which means that it has passed stringent factory and government tests. You must be able to rely upon your engine. If it should fail in the air you might have a serious crack-up, or at the very least a forced landing.

You should check the following desirable characteristics

of aircraft engines before you buy. First, low weight per horsepower. The engine should not weigh more than four pounds per horsepower.

Second, quick response. By actual demonstration see that the engine functions smoothly over a wide range of speeds at various altitudes and that it responds promptly to speed changes from idling to full power.

Third, economy of fuel and oil consumption — a factor of great importance. This is desirable from the standpoint of reducing the weight of fuel to be carried and keeping the cost of operation as low as possible.

Fourth, freedom from dangerous vibration. Engine vibration, if excessive, imposes unnecessary strains on the entire airplane and may cause breakage of pipes, tubes, and wires, as well as discomfort to the passengers. Vibration of the plane's instruments may seriously affect their accuracy. The engine should be well balanced and comparatively free from vibration at all operating speeds.

Grasshoppers for sale; Uncle Sam, prop.

Surplus stocks of small liaison planes and trainers that have been doing war jobs for the Army, Navy, and the Civil Air Patrol are being sold to civilian purchasers now. More of them may be available soon after the war is over. With their drab warpaint hidden beneath gay rainbow colors, some of these surplus Taylorcraft, Stinson, Cub, and Fairchild aircraft may be as good and as much in demand as new private aircraft. But don't expect to be able to buy one for a song.

Some of them may be in top condition when the government puts them up for sale. They may be more airworthy and more reliable in engine and instrument accessories than they were when Uncle Sam bought them new. In many cases the planes are being sold with very expensive instruments

and other equipment installed especially for wartime use and which are not to be removed before they are sold.

This does not necessarily mean they will be more airworthy or reliable or better buys than a brand-new plane. These little planes live a rugged life under GI colors, and in many cases are sold "as is." Only planes that tip the scales at more than 5,000 pounds are checked over before disposal by the service branch which has used them.

Engineers of the Civil Aeronautics Administration examine every *type* of plane declared surplus by the armed forces to determine whether it is airworthy according to CAA standards. Airworthiness means it is safe for operation in civilian hands.

Some of these planes are so close to civilian standards—many of them came right off civilian assembly lines—that no changes will be necessary. Others, built or rebuilt to military specifications, will require certain changes to meet established civilian standards of safety. CAA engineers will determine what these changes are as to each type.

Individual airplanes of that type, however, may need specific repairs in addition to these changes to conform to airworthiness requirements. In some instances, thus, the purchaser may have to make minor alterations, specified by CAA engineers, before a license can be issued.

Now—or later?

Small airplane manufacturers view the sale of more and more of these planes by Uncle Sam as a threat to their business in the immediate postwar era. It has been suggested that the government restrict the sale of such planes to schools and colleges and public or federal aviation training programs. These organizations need aircraft to use in instructing the future engineers, pilots, mechanics, and technicians

who will keep American aviation ahead of the rest of the world. If the sales of such planes are limited in this way, airplane manufacturers will not have to wait a year or two until a substantial market for new aircraft begins to develop and will have a chance to develop their business in an open market.

If, on the other hand, airplane manufacturers are forced to wait a year or two, they might benefit from the time by devoting their entire efforts to the improvement of their planes and the development of new types of personal aircraft. Then, when they are ready to display their wares before the public, they will be able to offer planes of much greater utility.

One-third down, a year to pay

If you want to buy a new airplane or a used warplane under a time-financing plan, the banks are ready to offer you an installment plan, as well as special financing services for other phases of aviation.

One Pacific Coast bank has the following plan for the purchaser of a \$1,500 private airplane. He can pay one-third



down and the balance in twelve monthly installments of \$103.50, making a total of \$1,742. These payments also cover \$183 worth of insurance and finance charges totaling \$59.

Other plans being offered include time financing for student, pilot, or mechanic training and financing arrangements between manufacturers and distributors. Under the latter program, persons interested in becoming aircraft dealers are established financially and provided with planes to sell.

How long will you keep your plane?

On the average, one individual owns a plane for three and a half years — according to studies made by the Civil Aeronautics Administration. This is about half the useful life of the private plane. In many cases private planes change hands every year or so.

In the prewar days many people learned to fly, bought airplanes, and then discovered that the upkeep was too great, too much time was spent in getting back and forth from the airport, and that flying had not proved as useful as they expected. They sold their planes and in many instances gave up flying. Cost of maintaining and operating a private plane has always been the main consideration in its purchase. However, this cost must be weighed against the value received. Undoubtedly, in many cases the owners mentioned above could have cut their other expenses sufficiently to carry on their flying if they had believed it was important or necessary to their way of living.

As the utility value of an airplane increases, more people will buy planes and will keep them longer. If the airplane becomes a necessity, a person's income bracket will not be the main factor in determining whether he can buy a plane

and keep it. In a recent survey of one hundred airplane owners in one part of the country it was revealed that their average annual income was \$2,200.

Would you purchase a used warplane for your private flying machine if you could buy a new plane? Should most of the used warplanes on sale be restricted to institutions providing instruction for aeronautical trainees? Should war veterans who want to purchase private aircraft be able to buy them at a reduced price? Would this privilege be abused by some who might buy planes for resale at a profit? Will installment plans for the purchase of aircraft get more people interested in flying?

WHO'S GOING TO PROVIDE YOUR GROUND FACILITIES?

UNQUESTIONABLY, MANY PEOPLE will want to use planes in the peace years to come who will not be able to afford planes of their own, or if they can buy planes, will have no air park or facility from which to operate them. Group or community cooperation may be the answer for such people.

One solution to both these problems is the formation of aviation clubs. A few individuals can organize a flying club and purchase one or more planes for the exclusive use of the members. In this way they can enjoy flying at a lower cost to all than if each bought his own plane and had to bear the initial cost and maintenance. Those persons who own planes or are thinking of buying planes for themselves, but who have no convenient airport, may form a club for the purchase of a suitable place to land. Usually a reasonably flat field 2,500 feet long by 400 feet wide can be located near any community. Grading and sodding can be done inex-

pensively and a hangar can be built for the use of all members. Upkeep costs would have to be met through dues and assessments and from the profits of the sale of gasoline and lubricating oil.

Those persons who want to fly but who do not want to spend a lot of money will find that they can rent planes from "Fly-Yourself" services or from flying clubs which will have several types of planes available. An added advantage of renting a plane is that, as you become a more expert pilot, you will be able to rent the next larger class of plane. You won't find yourself, with a plane on your hands, wishing for a larger one. Operators with several planes for hire will find that they can make a good living where the competition is not too heavy.

Airports are necessary

As a motorboat needs a dock or place to anchor, so a plane needs an airport. Facilities for landing private planes in America are not yet built and private flying cannot succeed until there are ground spaces and proper landing facilities. At the present time only 3,000 airports are available for landing private planes, many of questionable usefulness because of poor location or because they are congested with commercial planes. Thousands more will be needed to serve the 16,752 communities in which the major population of the United States lives.

Both the aircraft industry and government agencies are urging communities to develop air parks for the exclusive use of nonscheduled or personal aircraft. These air parks are constructed with runways laid out in the shape of an X, T, L, or V. The cost of such projects has been estimated to lie somewhere between \$25,000 and \$500,000, depending upon the terrain, amount of drainage, soil preparation, and

whether the runways are built of turf or hard-surfacing materials — such as asphalt or concrete.

Air parks should be located conveniently for the traveler, businessman, and ordinary flyer. If possible, they should be near a terminal airport so that persons can park their planes and go aboard airliners for trips to distant points, just as you park your car at a railroad station and climb aboard a train today.

It's a community job

The building of an air park is ordinarily a community project, undertaken as a public improvement just as city streets and parks are. Funds for the air park can come from the city treasury or be secured by public subscription. At the beginning the air park cannot even be considered as self-supporting. However, it should eventually pay for itself through taxes on the sale of gasoline and rentals from private enterprises located on the air-park grounds, such as hangars, repair shops, restaurants, and airplane salesrooms.

It cannot be expected to pay for itself as rapidly as did the public highway system, since it may be some time before private airplane traffic brings in as high revenue as automobile traffic does today. When the airplane begins to reach the utility value of the automobile, air parks will begin to pay for themselves.

Each community must determine whether or not it is justified in spending \$25,000 or more of its citizens' money for an air park. From the point of view of the community, there are a number of important advantages in having an air park. With lots of air parks scattered over the country, airplane owners can travel and vacation and see the sights whenever and wherever they happen to feel like going. An air park promotes commuting between cities. It offers to visitors,



professional men, and businessmen a rapid way of coming and going. It may eventually become a valuable necessity to business activities and commerce.

If it is the only air facility in the community, it will provide a place for on-the-spot aviation education and a headquarters for ever-ready aerial ambulance service for emergencies. It may be expanded later to a full airport, connecting with national air routes. It will provide more jobs in the community both during its construction and afterward, broaden individual horizons, and stimulate greater community interest on the part of its citizens.

How can the utility value of personal airplanes be increased? Is the expenditure of public funds for air parks justifiable? Should the state or federal government provide funds for local air parks?

ARE YOU PHYSICALLY FIT TO BE A PILOT?

WHEN THE FIGHTING ENDS, some 250,000 or more Army and Navy pilots are going to begin coming back from the war fronts, most of them eager to continue their flying. A large percentage of them will be young men of college age or even younger, and while many will be immediate prospects for personal planes, relatively few will have enough money to buy airplanes of their own.

Even though they could afford a \$1,500 plane, pilots accustomed to the speed and performance of a B-25 Mitchell bomber or a P-38 Lightning may find that flying a 60-horsepower private airplane is pretty dull.

It has been suggested that the government sell its surplus fighter planes to these veterans of the air at about 10 percent of their cost. But this scheme just won't work out. The purchase price of the average fighter plane would run around \$4,000 and its 1,000-horsepower motors drink up some 100-gallons of expensive high octane fuel in less than 60 minutes. Only independently wealthy ex-servicemen could afford to buy and maintain such planes.

While it is not practical to sell fighter planes to veterans, it is very important that we do not allow these highly trained pilots to lose their skill. For we must depend on them to prevent our air power from ever again becoming woefully inadequate.

Two practical ways have been suggested in which ex-warplane pilots can be kept in the air. They could be put on a reserve status, with military planes available for their use, or they could buy flying time from commercial schools and be reimbursed by the government for a certain number of flying hours each week.



Are war pilots safe flyers?

Many service pilots have never received civilian pilot training. All their air education has been in the aerial acrobatics of combat flying. This is not permitted in the skies over America, where it might endanger civilian lives and property.

Under an official Army Air Force policy, combat and air crews will be required to take training courses in the principles of flying safety and civil air traffic rules after they return from overseas and before they are reassigned to active duty. These special courses are now going on at redistribution centers on both the Atlantic and Pacific coasts. Commenting upon the new policy, General Arnold remarked, "Flying safety in this country shall have first consideration, and unsafe flying habits acquired in combat must be forgotten."

Returning military pilots are eager to fly, and private plane owners often urge them to fly their planes regardless of their inability to handle such slow and low-powered aircraft after months of flying high-speed military planes. Enough nonmilitary accidents have resulted to make it nec-

essary for the CAA to require returning pilots to prove their complete adequacy for the type of flying involved.

Any service pilot who has not flown a certain type of plane in three months is now required to make five take-offs and landings before he can take up a passenger. If he has not had solo experience within six months, he must take a check flight with an instructor.

To prevent fighter pilots from stepping into the cockpits of commercial airliners and taking up passengers on the strength of their war record, civil air regulations now require the service pilot to prove that his military pilot rating is equal to the type and grade of pilot certificate he seeks. He must submit a certificate from the appropriate officer proving his experience and competency as a military pilot. In addition, he is required to pass a written examination on civil air regulations and must have a certificate of honorable discharge from the military service.

The importance of being healthy

The human body is best adapted to conditions on the ground. Some of these conditions change when man goes up into the air. In flying through a sea of air, you are subjected to various forces and conditions. You move through space at varying speeds and at all angles. The engine of your plane produces constant vibrations and much noise. If you are going to fly, you must be able to tolerate these conditions, and that means you must be physically fit every time you fly.

Unless a pilot keeps physically fit, he is likely to have a fatal flying accident sooner or later. Commercial airlines, military flying organizations, and other organized flying groups keep close watch over the health of their flying personnel, requiring them to take periodic physical checkups and placing them under regular medical supervision.

Since there is no means of checking up on the flying health of private flyers regularly, the flyer himself must take the responsibility for maintaining physical fitness.

More than half the 17,050 air accidents during the period between 1928 and 1937 were officially attributed to "error of the pilot." Year after year, pilot error is the most outstanding cause of air accidents. The principal reasons for it, according to the CAA, are lack of experience and physical and psychological causes.

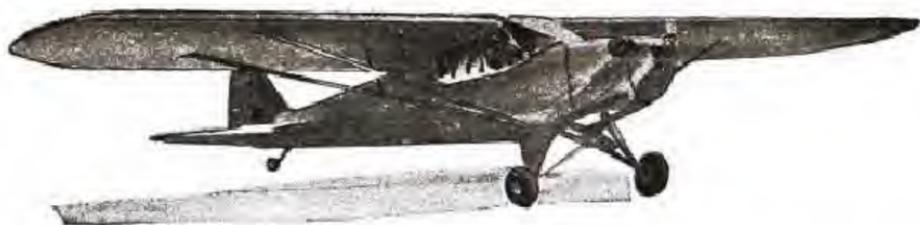
Defective vision, poor judgment of distance, unconsciousness, hysterics, air sickness, and the inability to withstand altitude are only a few of the causes that may lead to such accidents as overshooting the field, faulty landing, or collision. Temporary illness, such as a bad cold, or fatigue may cause poor reaction on the part of the pilot and result in an accident.

Private pilots must be intelligently aware of their own physical shortcomings, such as susceptibility to colds, sinusitis, constipation, hay fever, hiccups, headaches, jaundice, kidney and bladder diseases, neuralgia, neuritis, high blood pressure, all of which lower his flying efficiency. For most new pilots this means adjusting daily routine to better health habits.

It is a good idea for a beginner to consult a doctor or a flight surgeon before his training has progressed very far — it may save his life.

What happens to you when you fly?

Since most private flyers will not be operating aircraft at altitudes above 8,000 feet, they need not be concerned with the problems of lack of oxygen, low pressures, and subzero temperatures encountered at higher levels. Change in altitude, turbulent or rough air, and change of speed are the



factors which will have the most effect on the average private flyer.

The ears and digestive system are affected when you ascend or descend. The eardrums may feel queer because the change in air pressure is not quickly equalized on both sides of the eardrum, a sometimes painful condition that can usually be remedied by swallowing. During a rapid climb, pilots and passengers are sometimes made uncomfortable by distention of the intestines due to expansion of confined gases. At a normal climb of 1,000 feet a minute this condition may usually be avoided.

Rough weather sometimes causes airsickness, a condition similar to seasickness, and nausea. Lack of sleep, drinking of alcoholic beverages, and a disordered stomach frequently contribute to susceptibility to such illness. Pilots who are physically tired or fatigued should never fly, except in case of emergency. Intoxicants such as liquor should not be taken for at least 24 hours before or during flight by pilot or passengers. Alcohol does not mix with gasoline in the air any better than it does on the ground.

After a period of high-speed flying the eyes frequently lose their ability to judge height correctly. A wise precaution before landing a plane, particularly for novice pilots, is to circle the field at 500 feet.

Do you measure up?

If you are physically fit and are willing to learn, you can be taught to fly the conventional private aircraft. If you are not physically fit, however, that does not mean that flying is out of the picture for you. It does mean that you'll have to work harder so that your weaknesses can be remedied to a point where you can become a safe pilot.

If you have a tendency to be cocky, reckless, and stubborn, you should use a little will power and sensible reasoning to cultivate modesty, care, and openmindedness — characteristics that virtually all the best pilots possess.

When you apply for a student pilot rating, you will have to pass a medical examination. You will not be required to sit in a spinning chair, since the examination does not require that you be a superman. It is given to discover whether you have any physical defect that might suddenly incapacitate you in the air.

Handicapped persons can fly

The loss of a limb, limitation of motion in joints, and the wasting of muscles need not keep any ex-service pilot or civilian from enjoying the pleasures of flying his own plane, if he can prove his ability to fly safely.

In an effort to extend the benefits of flying to still more persons, a new CAA ruling has been made. Under it, physically handicapped persons may obtain student and private pilot certificates without going through the long-drawn-out procedures heretofore required. The applicant's medical certificate for the license bears a notation of his defect, if he is otherwise qualified.

The applicant's instructor decides when he is competent to make a solo flight. Later, he takes a flight examination from a

CAA flight inspector in order to qualify for a private pilot's certificate.

Under the new ruling, structural defects and not physical conditions due to active diseases are recognized. The administrator of the CAA may limit the physically handicapped pilot to the operation of certain makes and models of planes, certain general types of planes, or to planes suitably remodeled for the individual concerned.

If there is an increase in accidents involving structurally handicapped persons who have been permitted to get certificates to fly, the CAA was wrong in making this new ruling. However, before the ruling was made, extensive successful tests were run to determine whether or not handicapped persons could qualify for private pilots' certificates.

No matter how well a plane is designed, or how carefully it is built, an instant's thoughtlessness at the wrong moment or gross neglect of its mechanical needs can turn the plane into an instrument of death for its pilot and passengers. A handicapped person in good health is no more likely to be guilty of these fatal errors than is a person of sound body.

Should returning service pilots be required to take additional training and prove their ability to fly small planes as is now required under CAA rulings and the AAF reassignment policy? What steps might be taken to prevent returning pilots from losing their flying skills? Should private pilots be required to take frequent medical checkups such as those given regularly to airline pilots? What can be done to prevent private pilots from flying while intoxicated, ill, or fatigued? Will the advent of private flying help to improve public health? Should doctors in training be required to take courses in aviation medicine?

HOW SHOULD PRIVATE FLYING BE REGULATED?

FURTHER RELAXATION of governmental regulations to provide more freedom for the development of private flying has been urged by many organizations, spearheaded by the Personal Aircraft Council of the Aeronautical Chamber of Commerce, an organization made up of airplane and aviation products manufacturers. In general, the efforts of this group are directed toward reshaping the rules and regulations governing personal aircraft to follow those now governing the automobile industry.

"The auto industry has achieved world leadership in design and production practice through industry initiative, unhampered by Government regulation," the Personal Aircraft Council points out in a recent statement of proposed policy on the subject.

The task of regulating airplanes and pilots is the job of the Civil Aeronautics Board and the CAA. These official government groups point out that licensing aircraft and certifying pilots is more necessary than licensing automobiles and their drivers. For public safety and the protection of property, airplanes must be airworthy and pilots must be competent.

It is illegal for anyone to fly a plane today without a certificate or a permit authorizing him to do so. In addition, it is against the law to fly any civil aircraft before the plane has proved safe in design and structure and been issued an airworthiness certificate by the CAA.

The Personal Aircraft Council believes that the present airworthiness requirements have added to the price of personal aircraft far out of proportion with actual safety needs. The Council suggests that the trend should be to rely more

on the manufacturer's responsibility for design and production practice and less on the government.

Such a change in regulations would definitely limit the CAA as a centralized authority for careful checking on the design, structure, and testing of new aircraft to see that these planes conform with the safety and performance standards. Every CAA rule was incorporated in the regulations only, presumably, after careful study and proof that it would increase safety and improve performance. These regulations and rules are continuously being amended by the CAA and CAB in a sincere effort to be of help to those who fly.

Who says you can fly?

"It should be the right of any American to obtain a pilot's certificate with no greater difficulty than in getting an auto driver's license," the Personal Aircraft Council recommended. Its report proposed that the right to pilot an aircraft should depend only on an applicant's proof of ability to fly the plane with reasonable skill. In addition he would have to pass a written test based upon an established set of questions and answers covering the things a pilot should know.

Under the present regulations an applicant for a private pilot's certificate must be of good character, be able to read and speak English, be free from any physical defect that would prevent the safe operation of aircraft under normal conditions, and be at least 17 years old. The applicant must make a satisfactory score on a written examination covering air traffic rules for contact flying and general rules of operation. In addition to at least 10 hours of instruction and 30 hours of logged solo time, the applicant must be able to make normal take-offs, turns, and landings, as well as successfully complete a series of prescribed maneuvers which demonstrate his ability to pilot aircraft.

As a means for keeping the safety record of aviation high, should physically handicapped persons be denied the right to fly? Should manufacturers of private aircraft be permitted to decide whether their planes are airworthy or not, or should CAA inspection and licensing be continued? Were the previous rules governing certification of pilots so strict that they would have slowed up the progress of private flying? Have they been relaxed too much? Should any pilot be permitted to give flying lessons without charging a fee?

SO YOU'RE GOING TO FLY— OR BE FLOWN?

AFTER THE WAR, private plane owners will be confronted with making a choice of traveling via air transport or flying their own planes, when doing cross-country flying.

Flying over the airways on a long cross-country hop in your own plane may become a tiring and even hazardous job, unless you have two-way radio equipment and an automatic pilot that takes over the job of flying the plane from time to time when you want to relax, and unless you plan to make the trip in easy stages.

Setting out to make a flight in your own plane from Columbus, Ohio, to New York City, you would first have to check in at the control tower at Columbus and announce your flight plan to the traffic control officer, giving him the time of departure, your destination, the route to be followed, and the speed and altitude at which you plan to fly. After receiving weather data and being cleared for take-off, you climb up to the predetermined altitude, probably 5,000 feet.

At Pittsburgh, you probably land and refuel before flying over the mountains. Again you have to check in at the control, file your flight plan, and get another clearance before

taking off. Once over the mountains, you may find the weather rough at 5,000 feet, and wish to ascend to 7,000 feet. Before doing this you have to contact the Pittsburgh control tower by radio and receive permission.

Once in the New York control area, you have to report your presence to the control tower at the field where you expect to land and notify them of your expected arrival time. Upon making a landing, you would have to check in at the control tower and let them know when you plan to make your departure.

Better take some money along too

The cost of such a trip is greater than the cost of just the fuel and oil that are needed to make the trip. You will have to pay from \$10 up for the privilege of making a landing at any airport, except emergency landing fields. If you fly yourself, and carry no passengers, the cost may be greater than airline fare.

Of course, if you are taking a vacation trip with the family, which means that you are not in too much of a hurry, it will be less expensive to make the trip in your own plane, if you can accommodate everyone.

Other determining factors which should help you decide whether you are going to fly yourself or be flown are: weather conditions (if weather is bad you'd be better off in a commercial airliner); airport facilities at the other end (check to see if you can land near where you want to go, for sometimes airports are closed to private flyers or for repairs); and route (if you have to cross broad expanses of water in a land-plane you'd be safer to fly in a commercial plane).

If you want speed, you will have to rely on the commercial airliner, which cruises along at speeds varying from 185 miles an hour for the DC-3 up to around 300 miles an hour for the

Constellation. This is two or three times as fast as your personal plane could operate at its maximum speed.

You'll be able to board a plane in New York at midnight and arrive in Los Angeles at eight o'clock the next morning, a trip of about eleven hours, allowing for the change in time. Cost of the trip will be about the same as the cost for first-class railroad fare plus Pullman and meals, or \$138.85 each way. Within ten years after the war, airline fares may be reduced to the point where it will actually be cheaper to fly than to go by railroad coach. Imagine going from coast to coast by air for only \$55!

Parking lots for planes may be provided at major air terminals over the country so that private plane owners can fly in from nearby communities. After parking their planes, they can board giant airliners to carry them great distances.

The question is yours to answer

Americans will do more traveling after World War II than ever before in their history. Commercial airlines will cross the country in every direction. They will link the United States with every major nation in the world. Railroad facilities will probably be improved, with more streamlined, air-conditioned trains operating at increased speed and comfort. Superhighways will permit faster and safer automobile travel.

Will these developments make it safer or faster or cheaper or more comfortable or more practical to travel by train, drive your own car, take a commercial airliner, or fly a plane of your own? Will private flying remain primarily for the wealthy sportsman or flying hobbyist? Or will it be a sound, safe, and sensible practice in the postwar daily life of the average American?

Should "aerocourts," similar to motor courts, be provided at airports and air parks, where private flyers on cross-country trips could secure overnight accommodations at low cost? Under what conditions would you fly yourself from Chicago to New Orleans? Fly in an airliner? Would it pay a traveling man to fly his own plane all the time or make use of airliners? Will the expansion of air transport to many cities now without commercial air service tend to reduce the number of private planes sold?

TO THE DISCUSSION LEADER

MAN'S AGE-OLD DREAM of flying has been realized within the lifetime of men and women barely past middle age. As this pamphlet is written, Orville Wright, one of the American brothers who made the first successful airplane flight, is still alive.

Americans are air minded. While Army and Navy flyers have been shooting down Germans and Japs in terrific sky battles, their sons and little brothers back home have been building and flying model planes. Pilots, air crew and ground crew men, little brothers, and the men and women who are building the planes all wonder what will happen in aviation after the war.

Private flying is part of the postwar aviation picture. It may concern the personal interests of more people than does

commercial aviation. It will involve personal decisions in individual homes: whether the family should buy a plane, whether members of the family should take flying lessons. Private flying is both a personal and a community problem.

Making discussion effective

Your problem as leader is to bring out the pro and con facts about private flying and to stimulate worth-while discussion among persons attending your discussion meeting.

You will find War Department Education Manual, EM 1, *GI Roundtable: Guide for Discussion Leaders*, filled with instructions and helpful suggestions on techniques of organizing and conducting group discussions. You can adapt these to your discussion of private flying — and to all other subjects in the *GI Roundtable* series.

If you should wish to broadcast your discussion program on a radio station or sound system of the Armed Forces Radio Service, you will find practical suggestions on radio discussion techniques in War Department Education Manual, EM 90: *GI Radio Roundtable*.

Private flying can be discussed by any of the usual discussion methods: forum, panel, symposium, or general group discussion. The size of your group and the facilities of your meeting place will help determine the method you use.

One suggestion for a forum meeting is that you invite some prominent flyer, either military or civilian — preferably one who had private flying experience before the war — to relate his experiences and give his views on the future of private flying.

If you could obtain two or more experienced flyers to speak to your group, you could use a panel or symposium method. General group discussion will follow, of course, any type of introductory talks.

Some members of your discussion group may have private flying experience which would provide a valuable addition to information given in this pamphlet. You should make full use of them and of questions raised by members of your group.

Persons attending your meetings will probably be interested in any good posters or photographs of small planes of the type suitable for private flying. You could display these on walls of your meeting place, or pass them among members of your group if the group is small.

Additional questions for discussion

Questions suitable for discussion have been grouped at various points in the text of this pamphlet. You are encouraged to amplify these and to use your own initiative fully in outlining your program and planning your discussion meeting. Additional questions pertaining to important phases of private flying are listed below.

1

What are basic factors *you* would consider in reaching a decision on whether to take up private flying? Can private planes be made so useful that they will become a necessity for many people? Will the initial and operating costs alone prevent wide ownership of private planes? If you had the money to buy either a good automobile or a small plane, which would you purchase? Why?

2

What qualities would you most desire in your own plane? Is it possible for an airplane to be foolproof? Would you prefer a metal or molded plastic plane? Why? If you could choose between a speedy jet-propelled plane and a conventional propeller-driven plane, which would you select? What do you regard as the major difficulties in selecting your plane?

3

What requirements should be set up to protect buyers against acquiring defective planes? Should sales agencies conduct their own flying schools for the instruction of private flyers? What should be minimum requirements for the training of private flyers in operation of planes and reading of navigational instruments? Should every potential pilot be required to take a course in radio operation?

4

How can the would-be flyer determine the best type of engine for his needs? Can you depend on converted military planes being sound and safe? Will the use of converted military planes for private flying discourage the manufacture of special new models for this purpose?

5

How would you suggest organizing an aviation club in your community? Will benefits of a local airfield to an average community justify the use of public funds for construction and maintenance? Would a community benefit more by encouraging private flying or by supporting commercial "feeder airlines" to connect with airports on main transcontinental airlines? Will military pilots accustomed to speedy planes with great maneuverability be a menace to community safety when flying small planes with low speeds and limited maneuverability? Will military ground crews be as much interested as trained military pilots in postwar private flying? Do you want your son or daughter to learn to pilot a plane? Should periodic inspection of all private airplanes be required by law? Do you believe government regulations should be increased as private flying grows and the number of airplanes increases?

What regulations should govern private flyers wishing to fly to Canada, Mexico, or more distant foreign countries? Would the cost and responsibility of owning and piloting your own plane increase or decrease your enjoyment of a vacation? A business trip? What are basic advantages of travel by air? Disadvantages? What kind of travel gives the most benefit: travel by plane, train, or automobile? Why?

FOR FURTHER READING

THESE BOOKS are suggested for supplementary reading if you have access to them or wish to purchase them from the publishers. They are not necessarily approved nor officially supplied by the War Department. They have been selected because they give additional information and represent different points of view.

OFFICIAL GUIDE TO THE ARMY AIR FORCES. Published by Pocket Books, Inc., New York 20, N. Y. (1944). \$.25.

GUIDE TO NAVAL AVIATION. By Lieut. Wallace W. Elton, USNR, and others. Published by McGraw-Hill Book Co., 330 West 42d St., New York 18, N. Y. (1944). \$2.50.

THE AIRPLANE AND TOMORROW'S WORLD. By Waldemar Kaempfert. No. 78 of *Public Affairs Pamphlets*, published by Public Affairs Committee, 30 Rockefeller Plaza, New York 20, N. Y. (1943). \$.10.

- MAPS, AND HOW TO UNDERSTAND THEM.** Published by Consolidated Vultee Aircraft Corporation, P. O. Box 157, New York, N. Y. (1943). Free on request.
- SCIENCE OF PRE-FLIGHT AERONAUTICS.** By Aviation Education Research Group, Teachers College, Columbia University. Published by Macmillan Co., 60 Fifth Ave., New York 11, N. Y. (1942). \$1.32.
- WINGS AFTER WAR.** By S. Paul Johnston. Published by Duell, Sloan and Pearce, 270 Madison Ave., New York 16, N. Y. (1944). \$2.00.
- TOMORROW WE FLY.** By William B. Stout and Franklin M. Rock. Published by Thomas Y. Crowell Co., 432 Fourth Ave., New York 16, N. Y. (1943). \$2.00.

OTHER GI ROUNDTABLE SUBJECTS

Introductory copies of each new *GI Roundtable* pamphlet are automatically issued to information-education officers in the United States and war theaters. Additional copies are authorized on the basis of two to a company or similar organization. Pamphlets may be requisitioned from the United States Armed Forces Institute, Madison 3, Wisconsin, or from the nearest USAFI Oversea Branch. List EM number, *GI Roundtable* series, title, and quantity. New subjects will be announced as published. Subjects now available:

- EM 1, GUIDE FOR DISCUSSION LEADERS
- EM 2, WHAT IS PROPAGANDA?
- EM 10, WHAT SHALL BE DONE ABOUT GERMANY AFTER THE WAR?
- EM 11, WHAT SHALL BE DONE WITH THE WAR CRIMINALS?
- EM 12, CAN WE PREVENT FUTURE WARS?
- EM 13, HOW SHALL LEND-LEASE ACCOUNTS BE SETTLED?
- EM 14, IS THE GOOD NEIGHBOR POLICY A SUCCESS?
- EM 15, WHAT SHALL BE DONE ABOUT JAPAN AFTER VICTORY?
- EM 20, WHAT HAS ALASKA TO OFFER POSTWAR PIONEERS?
- EM 22, WILL THERE BE WORK FOR ALL?
- EM 23, WHY CO-OPS? WHAT ARE THEY? HOW DO THEY WORK?
- EM 24, WHAT LIES AHEAD FOR THE PHILIPPINES?
- EM 30, CAN WAR MARRIAGES BE MADE TO WORK? *
- EM 31, DO YOU WANT YOUR WIFE TO WORK AFTER THE WAR?
- EM 32, SHALL I BUILD A HOUSE AFTER THE WAR?
- EM 33, WHAT WILL YOUR TOWN BE LIKE?
- EM 34, SHALL I GO BACK TO SCHOOL?
- EM 35, SHALL I TAKE UP FARMING?
- EM 36, DOES IT PAY TO BORROW?
- EM 40, WILL THE FRENCH REPUBLIC LIVE AGAIN?
- EM 41, OUR BRITISH ALLY
- EM 42, OUR CHINESE ALLY
- EM 43, THE BALKANS — MANY PEOPLES, MANY PROBLEMS
- EM 44, AUSTRALIA: OUR NEIGHBOR "DOWN UNDER"
- EM 45, WHAT FUTURE FOR THE ISLANDS OF THE PACIFIC?
- EM 46, OUR RUSSIAN ALLY
- EM 90, GI RADIO ROUNDTABLE

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